05-17-04

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 1724
LOVELL et al.	Examiner: Not Yet Assigned
Serial No.: 10/600,117	**INFORMATION DISCLOSURE STATEMENT**
Filed: June 20, 2003	
Atty. File No.: 2060-92	Express Mail Label: EV368038064US
For: "HIGH CAPACITY REGENERABLE SORBENT FOR REMOVAL OF ARSENIC AND OTHER TOXIC IONS FROM DRINKING WATER"	

Mail Stop: Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The references cited on attached Form PTO-1449 are being called to the attention of the Examiner.

☒ Copies of the cited foreign patents and/or non-patent references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or U.S. patent application publications are not enclosed in accordance with the waiver dated July 11, 2003, whereby patent applications filed after June 30, 2003 and international applications that have entered the national stage under 35 U.S.C. § 371 after June 30, 2003 need not submit copies of U.S. patents and U.S. patent application publications.

☐ Are not enclosed, in accordance with 37 C.F.R. 1.98(d), because the references were submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references are believed to be summarized in the attached English abstracts and in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfies one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry into the national stage of an international application as set forth in 37 CFR 1.491 or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a Request for Continued Examination (RCE) under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of one of the following conditions: (1) a final action under 37 C.F.R. 1.113 or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ A check in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account No. 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Enclosed is the fee in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account No. 19-1970. Please credit any overpayment or charge any underpayment to Deposit Account No. 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS, P.C.

By: Mary Breen Smith

Mary B. Smith
Registration No. 43,512
1560 Broadway, Suite 1200
Denver, CO 80202-5141
TELEPHONE: 303-863-2975
FAX: 303-863-0223

Date: 5/12/04

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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 2060-86	SERIAL NO. 10/253,944
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT BRODERICK	
	FILING DATE September 23, 2002	GROUP ART 1724

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROP.

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
							YES	NO

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)

	1	"Appendix B: Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring; Final Rule (66 FR 6976)"; *Environmental Protection Agency*; August 2002; pp. 1-174
	2	"Arsenic Drinking Water"; *The National Academies Press*; 1999; 5 pp.
	3	"Arsenic in Bangladesh Ground Water: World's Greatest Arsenic Calamity"; *International Conference , Wagner College, Spiro Hall; Staten Island, NY, USA*; February 27-28, 1999; 32 pgs.
	4	"Arsenic in Drinking Water: Treatment Technologies for Arsenic Decision Tree, Variances and Exemptions"; *Environmental Protection Agency*; June 2-3, 1999; pp. 1-9; website: http://www.epa.gov/cgi-bin/epaprintonly.cgi
	5	"Arsenic Toxicity"; *Agency for Toxic Substances and Disease Registry*; October 2000; pp. 1-42
	6	"Arsenic Treatment Technologies for Soil, Waste, and Water"; *US Environmental Agency*; September 2002; pp. i - 16-4
	7	Balasubramanian et al.; "Arsenic Removal from Industrial Effluent through Electrocoagulation"; *Chem. Eng. Technol.*; 2001, Vol. 24, No. 5; pp. 519-521
	8	Chwirka et al.; "Removing Arsenic from Groundwater"; *Journal AWWA - Executive Summary*; March 2000, Vol. 92, No. 3, 2 pp.; website: http://www.awwa.org/Communications/journal/Archives/j300es4.htm
	9	Davis; "Aqueous Silica in the Environment: Effects on Iron Hydroxide Surface Chemistry and Implications for Natural and Engineered Systems"; *Master's Thesis, Virginia Polytechnic Institute and State University*; May 9, 2000; pp. i-30
	10	"Demonstration Project Summary: Arsenic Treatment Technology Demonstration"; *TAC, Montana University System Water Center*; March 2001; 4 pp.

EXAMINER	DATE CONSIDERED
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 2060-92	SERIAL NO. 10/600,117
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT LOVELL et al.	
	FILING DATE June 20, 2003	GROUP ART 1724

U.S. PATENT DOCUMENTS

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	7	Balasubramanian et al.; "Arsenic Removal from Industrial Effluent through Electrocoagulation"; *Chem. Eng. Technol.*; 2001, Vol. 24, No. 5; pp. 519-521
	8	Chwirka et al.; "Removing Arsenic from Groundwater"; *Journal AWWA - Executive Summary*; March 2000, Vol. 92, No. 3, 2 pp.; website: http://www.awwa.org/Communications/journal/Archives/j300es4.htm
	9	Davis; "Aqueous Silica in the Environment: Effects on Iron Hydroxide Surface Chemistry and Implications for Natural and Engineered Systems"; *Master's Thesis, Virginia Polytechnic Institute and State University*; May 9, 2000; pp. i-30
	10	"Demonstration Project Summary: Arsenic Treatment Technology Demonstration"; *TAC, Montana University System Water Center*; March 2001; 4 pp.
	11	Driehaus et al.; "Granular Ferric Hydroxide - A New Absorbent for the Removal of Arsenic from Natural Water"; *J. Water SRT - Aqua*; 1998Vol. 47, No. 1; pp. 30-35

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	12	"EPA Needs More Stringent Standard for Arsenic in Drinking Water"; *US Water News Online*; April 1999; 3 pgs.; website: http://www.uswaternews.com/archives/arcquality/9epanee4.htm.
	13	Fields et al.; "Arsenic Removal from Drinking Water by Coagulation/Filtration and Lime Softening Plants";*National Risk Management Research Laboratory , US Environment Protection Agency in Cincinnati, OH*; June 2000; pp. i-96
	14	"Future Water Needs in Colorado"; *Colorado State Demographer*; 1994; 1 pg.; website: http://waterknowledge.colostate.edu/future.htm
	15	Hering et al.; "Arsenic Removal by Ferric Chloride"; *Journal AWWA*; April 1996; pp. 155-167
	16	Kiura et al.; "Bactericidal Activity of Electrolyzed Acid Water from Solution Containing Sodium Chloride at Low Concentration, in Comparison with that at High Concentration"; *Journal of Microbiological Methods*; 2002, Vol. 49, pp. 285-293
	17	Kraft et al.; "Electrochemical Water Disinfection Part I: Hypochlorite Production from Very Dilute Chloride Solutions"; *Journal of Applied Electrochemistry*; 1999; Vol. 29, pp. 861-868
	18	Lepkowski; "Arsenic Crisis Spurs Scientists"; *C & EN*; May 17, 1999; pp. 45-49
	19	"List of Drinking Water Contaminants & MCLs"; *US Environmental Protection Agency*; (Last updated March 18, 2004); pp. 1-12 and 1-6
	20	Mollah et al.; "Electrocoagulation (EC) - Science and Applications"; *Journal of Hazardous Materials*, B84; 2001, pp. 29-41
	21	Morita et al.; "Disinfection Potential of Electrolyzed Solutions Containing Sodium Chloride at Low Concentrations"; *J Viro Methods*; March 2000; Vol. 85(1-2); pp. 163-174
	22	Nolan; "National Statistical Analysis of Nutrient Concentrations in Ground Water"; *URL:* http://water.usgs.gov/nawqa/nutrients/datasets/nutconc2000/; 4 pgs.
	23	"Proven Alternatives for Aboveground Treatment of Arsenic in Groundwater"; *US Environmental Protection Agency*; October 2002; pp. 1 - E-2
	24	"Public Health Statement for Arsenic"; *Agencry fo rToxic Substances and disease Registry*"; September 2000; 12 pgs.; website: http://www.atsdr.cdc.gov/ToxProfiles/phs8802.html
	25	Renk; "Treatment of Hazardous Wastewaters by Electrocoagulation"; *Colorado Hazardous Waste Management Society*; November 6-7, 1989; 12 pgs.
	26	Smith et al.; "Contamination of Drinking-Water by Arsenic in Bangladesh: A Public Health Emergency"; *World Health Organization*; 2000; pp. 1093-1103
	27	Welch et al.; "Arsenic in Ground-Water Resources of the United States"; *US Geological Survey*; May 2000; 4 pgs.
	28	Woodwell et al.; "Water Efficiency for Your Home"; *Rocky Mountain Institute 3rd Edition;* 1995; pp. 1-18

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